

Application No. 10/657,093
Docket No. YOR909980228US4

REMARKS

Status of Claims:

Claims 59-61, 63-64, 66-83, and 85-112 are pending. Each of the pending claims defines an invention that is novel and unobvious over the cited art. Favorable consideration of this case is respectfully requested.

Objections:

The disclosure and Claim 99 were objected to for reciting "im." The specification is hereby amended to properly recite "µm" as was recited in the parent patent.

Rejections Under 35 U.S.C. § 112, 1st Paragraph:

Claims 61, 63-64, and 91-94 were rejected under 35 U.S.C. § 112, 1st Paragraph, as containing subject matter which was not described in the specifications in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The Federal Circuit has held that "when rejecting a claim under the enablement requirement of § 112, the PTO bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by the claim is not adequately enabled by the description of the invention provided in the specification of the application; this includes, of course, providing sufficient reasons for doubting any assertions in the specifications as to the scope of the enablement." *In re Wright*, 27 USPQ 2d 1510, 1513 (Fed. Cir. 1993). The courts have consistently held that the specification "need only be reasonable with respect to the art involved; they need not inform the layman nor disclose what the skilled already possess. They need not describe the conventional." *General Electric Co. v. Brenner*, 159 USPQ 335, 337 (D.C. Cir. 1968). Per the Federal Circuit, the Examiner bears an initial burden of setting forth, not merely conclusory statements, but a reasonable explanation as to why the PTO believes that the present invention is not enabled.

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Specifically, the Examiner alleges a lack of written support for the recitation of "regions off pair-bonds" associated with DNA in the loop. Therefore, the rejection must set forth reasons why the Examiner believes that persons of ordinary skill in the art would fail to comprehend that the "DNA in said R-loop includes at least one region pair-bonded with said RNA." However, at the time of filing of the present invention, the art, in fact, recognized that:

"R-loops are triple-stranded structures containing 1 mol RNA and 1 mol duplex DNA in which the RNA strand forms a heteroduplex with its complement and displaces the DNA strand of identical sequence. These structures are stable in 70% formamide and rely on Watson-Crick base pairing for sequence recognition.¹

The Examiner further alleges a lack of support for "a first linker" and "a second linker." The first and second linkers are described at columns 7-9. For example, the paragraph that begins at Column 9, line 38 (p. 27, l. 5):

"After application of the DNA molecule(s), the ones that are to extend between the first electrode and the second electrode ["bridging DNA"], to the substrate and electrodes they may bond to an organic structure, such as anchoring molecules, attached to the electrodes ["first and second linkers"].

These structures are again described in the parent patent in the paragraph beginning at column 8, line 50:

"After constructing or otherwise obtaining the DNA molecules to be attached to the first electrode ["first linker"] and the second electrode ["second linker"] they may be attached to the electrodes. A solution may be formed, that the DNA molecules are to be added to. First, an aqueous solution of a salt is formed. One Example of a salt is sodium chloride. Each DNA molecule, where a different molecule is to be attached to each electrode, may then be added to the solutions."

Attachment of the "bridging DNA to the "first and second linker" is described in the paragraph in the parent beginning at column 9, line 26:

After attachment of the anchoring molecules to the electrodes, the structure that is to extend between the first electrode and the second electrode may be applied to the structure, such as illustrated in FIG. 1c. In the case where the organic structure includes DNA, the DNA may be applied to the substrate over

¹ Landgraf, et al., 23(17) Nucleic Acids Research 3524-3550 (1995) (submitted in accompanying IDS).

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the electrodes and space between the electrodes. The organic structure could be applied in a solution. One method for creating a DNA bridge between electrodes is disclosed in Braun et al., DNA-templated assembly and electrode attachment of a conducting silver wire, Nature, Vol. 391, pp.775-777, Feb. 19, 1998, the entire contents of which is hereby incorporated by reference.

Claim 69 was under 35 U.S.C. § 112, 1st Paragraph, as containing subject matter which was not described in the specifications in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. This rejection was taken in view of the recitation "regions of pair-bonds." This rejection is respectfully traversed as discussed above.

Claim 69 was under 35 U.S.C. § 112, 1st Paragraph, for reciting "wherein the DNA is λ -DNA. The specification at page 15, lines 1-5 is hereby amended to recite " λ -DNA" in conformity with the disclosure of the parent application. The amended recitation supports the claim recitation.

Claims 78, 81, 108, and 110 were rejected under 35 U.S.C. § 112(2nd) as indefinite for reciting the terms "OR gate" or "AND gate." These terms were defined in the patent at column 11, lines 36 and 56. Moreover, the terms "OR-gate" and "AND-gate" are standard in the industry.

Claim 64 was rejected for depending from a cancelled claim. Claim 64 is hereby amended to depend from Claim 63.

Conclusion:

In view of the above, consideration and allowance are, therefore, respectfully solicited.

Accordingly, it is respectfully requested that the foregoing amendments be entered, that the application as so amended receive an examination on the merits, and that the claims as now presented receive an early allowance.

In the event the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

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The Commissioner is hereby authorized to charge any fees or credit any overpayment associated with this communication, including any extension fees or fees for the net addition of claims, to Deposit Account No. 22-0185.

Dated:

Respectfully submitted,

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